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New Records of Behningiidae, Potamanthidae and Prosopistomatidae (Ephemeroptera) from Thailand

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Abstract We describe the distribution and habitats of three new records of mayfly species from Thailand: *Behningia* sp., *Rhoenanthus speciosus*, and *Prosopistoma wouterae*. This is the first record of the family Prosopistomatidae from Thailand.

Key words: Behningiidae, Potamanthidae, Prosopistomatidae, mayfly, Thailand

Introduction

Tropical Asian streams are renowned for their diverse fauna, although specific knowledge about the taxa inhabiting them is scarce¹. Several faunal lists of mayflies are available for south and southeast Asia, including the Indian subregion², Hong Kong³, and the Philippine Islands⁴. Excellent keys to the genera of tropical Asian streams are available¹, but no such publications exist specifically for Thailand.

A small amount of published information about Thai mayflies (Ephemeroptera) is available^{5,6}. In a series of studies on ecological aspects of aquatic insects, including their potential as indicators of water quality, as many as 10 families of mayflies were reported for the northeast of Thailand (personal communication, Sangpradub *et al.*), and 9 families for southern Thailand^{7,8,9}, but details on the taxonomic resolution were not presented. Recently, Sites *et al.*¹⁰ provided the first comprehensive taxonomic treatment of the nymphs of families and genera of mayflies of southern Thailand, including the collection of 11 families and 26 genera.

In this paper, the first records of three mayfly species for Thailand are reported, including the first record for the family Prosopistomatidae. This note adds to the existing knowledge on mayflies of southern Thailand by including Prosopistomatidae and Potamanthidae, and brings the total to 13 families and 28 genera.

***Behningia* sp. (Behningiidae)**

Specimens examined: 2 nymphs, THAILAND: Phitsanulok Province; Ban Coke Puk Hwuan; Amphur Chartrakan; Klong Namkub (17° 17' N, 100° 38' E), L-172, 9 June 1998, coll: Sites, Simpson, Vitheepradit.

The known Oriental fauna of Behningiidae is represented by a single described species, *Protobehningia merga* Peters & Gillies¹¹, recorded only from the type locality: THAILAND, Kanchanaburi Prov., Mai Nam Khwae Noi, 18 km north of Nam Tok¹². The genus *Behningia* is known only from three Palearctic species: *B. lestagi* Motas & Bacesco from Europe, and *B. tshernovae* Edmunds & Traver and *B.*

ulmeri Lestage from Russia¹¹.

We collected two mature nymphs from a gravel bar in a turbid stream that appear to be a species of *Behningia*. The substrate was loose and best characterized as gravel and sand. A photograph of the collecting locality (L-172) may be accessed via a locality image database link from the Enns Entomology Museum internet site. Also collected in this mesohabitat were adults and immatures of *Aphelocheirus petersi* Polhemus and Polhemus (Heteroptera: Naucoridae). Given the geographical distance from the nearest described species of *Behningia*, these specimens probably represent an undescribed species. The specimens have been deposited in the reference insect collections of the University of Missouri-Columbia and Florida A&M University.

***Rhoenanthus speciosus* Eaton (Potamanthidae)**

Specimens examined: 4 male and 6 female imagines, 2 male and 1 female subimagines, 9 nymphs, THAILAND, Songkhla Province, Khao Nam Khang National Park (6° 36' N, 100° 36' E), Amphur Na Tawee, 102 km SE of Amphur Hat Yai, 100 m elev., 23 April 2000, 18 and 30 August 2000, 27 January 2001, coll: Parnrong, Bauthong.

The genus *Rhoenanthus* has not been recorded previously in southern Thailand, although two species have been found in northeastern and northern Thailand. Specifically, Khao Yai National Park is the type locality for *R. distafurcus* Bae & McCafferty, and *R. obscurus* Navás was recorded in Chiang Mai. Our record of *R. speciosus* is the first in Thailand, and extends the known distribution of this species from Indonesia and Malaysia¹³ northward into southern Thailand.

We collected mature nymphs on several occasions in surber samples, and by hand from the under-surface of stones. The substrate was mostly sand and small-to-medium sized stones. Adults were captured by light trapping at dusk. The specimens agree with the redescriptions of *R. speciosus*¹³, and have been deposited in the museum of the Department of Pest Management, Faculty of Natural Resources, Prince of Songkla University (PSU), Hat Yai, Thailand.

***Prosopistoma wouterae* Lieftink (Prosopistomatidae)**

Specimens examined: 15 nymphs, THAILAND, Songkhla Province, Amphur Rataphum, a 2nd order stream below Boripat Waterfall (6° 59' N, 100° 9' E), 60 km SW of Amphur Hat Yai, 200 m elev., 28 April 2000, 25 October 2000, 10 June 2001, coll: Bauthong, Parnrong, Sites.

The family Prosopistomatidae is represented by only a single genus, *Prosopistoma* Latreille¹⁴. Seventeen species of *Prosopistoma* are known and are widely distributed through Europe¹⁵, Africa¹⁶, the Oriental region^{14,17,18}, and Australia¹⁹. Of these, only nine species are known to occur in the Oriental region, including Java and Sumatra^{20,21}, India, Papua New Guinea, the Philippines, Sri Lanka¹⁷, Vietnam¹⁸, and China¹⁴.

We collected mature nymphs in a small stream in southern Thailand. The specimens were collected using a surber sampler and kick nets approximately 100 meters downstream from a waterfall on a sand and small stone substrate, among large fixed rocks. One specimen was found in a drift sample collected about 500 meters downstream from the first site, the substrate being mostly sand. Our specimens appear

to be *P. wouterae*, which was originally described from Java²⁰. This is the first record of *P. wouterae*, and hence Prosopistomatidae, in Thailand. The specimens have been deposited in the museum of the Department of Pest Management, Faculty of Natural Resources, PSU, Hat Yai, Thailand, and in the reference insect collections of the University of Missouri-Columbia and Florida A&M University.

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